IS 9761 : 1995

Indian Standard

HYDROPOWER INTAKES – CRITERIA FOR HYDRAULIC DESIGN

(First Revision)

1 SCOPE

This standard describes the criteria for hydraulic design of hydropower intake structures.

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Intake Structures Sectional Committee had been approved by the River Valley Division Council.

An intake is provided in a hydroelectric development to let water into the water conductor system. The intake design should be such as to:

a) Give minimum hydraulic losses;
b) Prevent formation of air entraining vortices;
c) Minimise sediment entry, specially in the case of run-of-the-river schemes; and
d) Prevent ice and floating material from entering the conduit or penstock.

This standard was first published in 1981. This revision has been prepared to incorporate certain changes necessitated in view of comments received from user organizations based on their experience in the use of the standard. The salient changes that have been incorporated in this revision are listed below:

i) Additional information has been laid down for run-of-the-river type intakes.
ii) Intakes in concrete and masonry dam has been divided in two parts and figures depicting semi-circular as well as penstock re-entrant type intake have been incorporated.
iii) Intakes in reservoir independent of dam have been illustrated.
iv) Layout of intake structures have been elaborated to include antivortex devices such as perforated breast-walls.
v) Details of side flaring entry have been incorporated as an illustration.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised)'*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.